SBA - 8

LIJIN JOY - 211441

1. program to take input of two integer arrays from the user and to find the sum of both the arrays.

Sort the elements of the resultant array in ascending order using selection sort.?

**import** java.util.Arrays;

**import** java.util.Scanner;

**public** **class** SelectionSortAscending {

**void** sort(**int** arr3[])

{

**int** n = arr3.length;

**for** (**int** i = 0; i < n-1; i++)

{

**int** min\_idx = i;

**for** (**int** j = i+1; j < n; j++)

{

**if** (arr3[j] < arr3[min\_idx])

min\_idx = j;

}

**int** temp = arr3[min\_idx];

arr3[min\_idx] = arr3[i];

arr3[i] = temp;

}

}

**void** printArray(**int** arr3[])

{

**int** n = arr3.length;

**for** (**int** i=0; i<n; ++i)

System.***out***.print(arr3[i]+" ");

System.***out***.println();

}

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

System.***out***.print("Enter number of elements in array= ");

**int** size = sc.nextInt();

**int** [] arr1 = **new** **int**[size];

**int** [] arr2 = **new** **int**[size];

// Array 1

System.***out***.println("Enter first array elements: ");

**for** (**int** i=0; i<arr1.length; i++) {

arr1[i] = sc.nextInt();

}

System.***out***.println("");

System.***out***.println("---------------------------------");

// Array 2

System.***out***.println("Enter second array elements: ");

**for** (**int** i=0; i<arr2.length; i++) {

arr2[i] = sc.nextInt();

}

System.***out***.println("");

System.***out***.println("---------------------------------");

// Array 3

**int** [] arr3 = **new** **int**[size];

**for** (**int** i=0; i<arr3.length; i++) {

arr3[i] = arr1[i] + arr2[i];

}

System.***out***.println("Sum of both Array: "

+ Arrays.*toString*(arr3));

// Selection sorting

SelectionSortAscending ob = **new** SelectionSortAscending();

ob.sort(arr3);

System.***out***.println("------------------------------------");

System.***out***.println("Sorted array is = ");

ob.printArray(arr3);

}

}

2.program to take input of Two arrays and store the similar elements into the resultant array.

 sort the resultant array in ascending order using bubble sort.

NOTE: there must at least be 6 similar elements.

similar elements= the elements occurring in both the arrays.

**import** java.util.Scanner;

**public** **class** bubbleSort {

**void** bubbleSort(**int** arr3[])

{

**int** n = arr3.length;

**for** (**int** i = 0; i < n-1; i++)

**for** (**int** j = 0; j < n-i-1; j++)

{

**if** (arr3[j] > arr3[j+1])

{

**int** temp = arr3[j];

arr3[j] = arr3[j+1];

arr3[j+1] = temp;

}}

}

**void** printArray(**int** arr3[])

{

**int** n = arr3.length;

**for** (**int** i=0; i<n; ++i)

System.***out***.print(arr3[i] + " ");

System.***out***.println();

}

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

System.***out***.print("Enter number of elements in array= ");

**int** size = sc.nextInt();

**int** [] arr1 = **new** **int**[size];

**int** [] arr2 = **new** **int**[size];

// Array 1

System.***out***.println("Enter first array elements: ");

**for** (**int** i=0; i<size; i++) {

arr1[i] = sc.nextInt();

}

System.***out***.println("");

System.***out***.println("---------------------------------");

// Array 2

System.***out***.println("Enter second array elements: ");

**for** (**int** i=0; i<size; i++) {

arr2[i] = sc.nextInt();

}

System.***out***.println("");

System.***out***.println("---------------------------------");

// similar element

System.***out***.println("similar elements is = ");

**for**(**int** i=0;i<arr1.length;i++){

**for**(**int** j=0;j<arr2.length;j++){

**if**(arr1[i]==arr2[j]){

System.***out***.print(arr1[i]);

}

}}

System.***out***.println("");

System.***out***.println("---------------------------------");

// similar element copied to a new array 3

**int** [] arr3 = **new** **int**[arr1.length];

**for** (**int** i = 0; i < arr1.length; i++) {

arr3[i] = arr1[i];

}

System.***out***.println("Similar element in the array is= ");

**for** (**int** i = 0; i < arr3.length; i++) {

System.***out***.print(arr3[i] + " ");

}

// Bubble Sorting

bubbleSort ob = **new** bubbleSort();

ob.bubbleSort(arr3);

System.***out***.println("");

System.***out***.println("------------------------------------");

System.***out***.println("Bubble Sorted array");

ob.printArray(arr3);

}}

3.program to take input two arrays and store the dissimilar elements into a resultant array.

sort the resultant array in a descending order using bubble sort.

dissimilar elements= the elements not occurring in both the arrays.(unique elements)?

**import** java.util.Scanner;

**import** java.util.\*;

**public** **class** BubblesortDiscending {

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

**int** n,i,j,t=0;

System.***out***.print("Enter number of elements in array= ");

n= sc.nextInt();

System.***out***.println("Enter the elements of first array");

**int**[] arr1 = **new** **int**[n];

**for**(i=0;i<n;i++)

{

arr1[i]=sc.nextInt();

}

System.***out***.println("Enter the elements of second array");

**int**[] arr2 = **new** **int**[n];

**for**(i=0;i<n;i++)

{

arr2[i]=sc.nextInt();

}

TreeSet<Integer> set = **new** TreeSet<>();

**for**(**int** f:arr1) {

set.add(f);

}

**for**(**int** k:arr2) {

set.add(k);

}

System.***out***.println();

System.***out***.println("Resultant array = ");

**int** len = set.size();

Integer[] result = **new** Integer[len];

result = set.toArray(result);

System.***out***.println(Arrays.*toString*(result));

**for**(i=0;i<len-i-1;i++) {

**for**(j=0;j<len-i;j++) {

**if**(result[j]<result[j+1])

{

t=result[j];

result[j]= result[j+1];

result[j+1]=t;

}

}

}

System.***out***.println("Resultant array after sorting");

System.***out***.println(Arrays.*toString*(result));

}}

4. Implement Array List and add, remove, elements in the Array List and perform sorting of the elements using the iterator.?

**import** java.util.\*;

**public** **class** ArrayList {

**public** **static** **void** main(String[] args) {

ArrayList<String> list=**new** ArrayList<String>();

list.add("Vijay");

list.add("Ravi");

list.add("Ajay");

System.***out***.println(list.get(1));

list.add("Amal");

System.***out***.println(list);

list.set(2,"Arun");

System.***out***.println(list);

Iterator itr=list.iterator();

**while**(itr.hasNext()){

System.***out***.println(itr.next());

}

ArrayList<String> al3 = **new** ArrayList<String>();

list.addAll(0,al3);

System.***out***.println(list);

list.removeAll(al2);

System.***out***.println(list);

}

}

5. Implement LinkedList and add, remove, elements in the LinkedList and perform sorting of the elements using the iterator.

**import** java.util.\*;

**public** **class** LinkedList {

**public** **static** **void** main(String[] args) {

LinkedList<String> list = **new** LinkedList<String>();

list.add("Helbert");

list.add("Steve");

list.add("Arun");

list.removeFirst();

list.removelast();

Iterator<String> iterator = list.iterator();

**while**(iterator.hasNext())

{

System.***out***.println(iterator.next()+" ");

}

list.remove(1);

System.***out***.println("After removing the second element: ");

Iterator<String> iterator2 = list.iterator();

**while**(iterator2.hasNext()) {

System.***out***.println(iterator2.next()+" ");

}

}

}